BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF DELAWARE

PSC DOCKET NO. 06-241
REVIEW AND APPROVAL OF THE REQUEST FOR PROPOSALS FOR THE CONSTRUCTION OF NEW GENERATION RESOURCES UNDER 26 DEL. C. § 1007(d)

Point-Counterpoint on PSC Staff Report on and Appended Consultant Assessment of Term Sheets

Jeremy Firestone
Willett Kempton
2 November 2007

Background

On October 29, 2007, the Public Service Commission (PSC) staff submitted a report on and appended the independent consultant's assessment of the term sheets for new power generation submitted by Delmarva Power. These preliminary comments address the major flaws in the analysis and approach undertaken by both the PSC staff and the consultant in their review of the term sheets. We submit these comments now, well in advance of the close of the comment period, to provide the staff with the longest possible opportunity to rectify these flaws in advance of the November 20th hearing. Indeed, the staff's truncated view of its role—notably, the complete failure to consider and analyze an easy solution to the deficiency noted by us and subsequently by staff in the Bluewater Wind term sheets (the uncontrolled price escalator)—resulted in the staff not otherwise properly considering the merits of the wind farm term sheet or analyzing the relative merits of the two gas backup proposals, including the necessity of either.

This comment is organized as "Point" (a statement in the staff or independent consultant report or the implication of the reports) and "Counterpoint" (our analysis of this same topic, supporting or refuting the point).

Point 1: The revised project includes an unreasonable pricing escalator, imposes significant additional risk as well as cost on Delmarva's SOS ratepayers
Counterpoint 1: We were the first to publicly call into question the price escalator in an op-ed "Perspective" in the News Journal on October 14, 2007 (the next day we submitted that op-ed as a comment on the record of this docket). We share the PSC Staff and Independent Consultant's concern over the lack of upside limit on the price escalator. All of the parties involved—Bluewater Wind, Delmarva Power, and the mediator, (and member of the PSC staff, but only if they were briefed during the process about the escalator) appear to have ignored the risk of the escalator and/or the risk to the project and thus the best interests of the ratepayers were not adequately considered until we and the Independent Consultant (IC) pointed out necessity of a cap and the risks associated with an uncontrolled escalator.

That said, there is a very easy solution that we suggested in our October 14 op-ed that the PSC Staff report did not even discuss—a cap on the escalator. Rather than proposing a simple solution to the problem, the staff essentially sent the matter back to the four state agencies, without any guidance on how to construct such a cap. They recommend that, if the project is to move forward, the "Bluewater proposal only be further considered under specific parameters that would address the risk and pricing concerns described herein."

Point 2: Staff expected that the negotiations would yield a lower price for the wind project, on a per customer kWh basis than the initial Bluewater bid proposal.
Counterpoint 2: The higher (un-escalated) cost per kWh in the term sheet project as compared to the initial project is due to two modifications that were recommended by staff and required by the four agency order. These modifications were 1. Smaller project size, and 2. More risk shifted away from Delmarva and the ratepayers onto Bluewater Wind. The effect of project size is basic economics and was clear in the record in this docket, as the transcript of the May 4 Hearing makes plain:

> PETER MANDELSTAM: "Obviously, by the laws of economics, if you build a smaller project, prices go up"
>
> WILLETT KEMPTON: …I am concerned about interpreting Staff's report as a considered recommendation to shrink the size of the wind contract. A smaller contract and/or a smaller physical installation generally means higher price per megawatt hour. …Thus, the resulting price, as calculated by the consultant, $99 per megawatt hours. Compare this with LIPA's contactor, that is, Long Island Power Authority's, similar long-term power purchase agreement requested by the power authority that was a 140 megawatt offshore wind park. The price there is $160 per megawatt hour. So, again, the [original Bluewater Wind] 600 megawatt project, $99 per megawatt hour -- even though it only has a 400 megawatt contact -- and the LIPA, 140 megawatt project, And it's not a linear relationship. Things will jump up and down in between those, and they are not totally comparable, but I think that this does give us a warning that shrinking the contract may have price implications.
>
> THE CHAIRMAN: If I may say, I think Mr. Mandelstam made that clear that he wanted to keep the flexibility, recognizing the issue of economies of scale and various other things. So I do think that message was actually conveyed.

Transcript at 1686; 1738-39.

The second factor is risk. The revised term sheets contain tens of millions of dollars in potential fines if Bluewater does not perform as specified and on time. This must be reflected in some way in the cost of the project, whether as insurance or other financial instrument. The Staff's apparent misunderstanding regarding the effect of project size and increased risk to the developer may have colored its entire outlook

of the Bluewater Term Sheet project—indeed it was one of the two "material" deviations the Staff indicated "drives Staff's decision." This is especially ironic given that staff requested these changes and the Staff's apparent misunderstanding provides a possible explanation for its failure to propose a cap on the escalator, These facts therefore suggest that little weight should be accorded to staff's overall conclusion regarding the wisdom of the project.

Point 3: A "conservative" estimate of the price above market to be borne by Delmarva SOS customers with the new price adjustment is $11.71/MWh compared to $6.23/MWh in Bluewater's original bid proposal or approximately $12 a month for a customer using 1,000 KWh. As a consequence the smaller project is more expensive and less favorable.
Counterpoint 3: It is true the State Consultant concluded that the "conservative" estimate would result in the new price for the wind power purchase would be $11.71/MWh over the hypothetical "market price" for energy. But, the 300MW block that includes wind energy (see Table 13 of the consultant's report) is only part of each RSCI customer's electricity. It is thus unfortunate that figures such as the $11.71 and $12/month were repeated by the Staff report, and then picked up in the press. The wild price projections reported in the press are a combination of this error in the interpretation of the data, added to the extreme assumptions about future escalations in commodity prices.

It also is true that the per kWh price of energy increased along with the capacity charge (should capacity be purchased). Also, the price for renewable energy credits increased. Nevertheless, the overall cost of the project (last column, Table 3 of the consultant report) and the impact on the average household (first column of figures in Table 13 and as described below) is expected to be less than the earlier larger project. This is due in part to a new more realistic hypothetical "market" price—an estimated price we believe is still too low (although our analysis was severally hampered by the consultant's failure to explicitly disclose[1] that price let alone the inputs that when into his calculation of the price)—and in part due to the smaller project and energy sale to Delmarva (it is about 1/3 smaller in total energy proposed to be sold to Delmarva), and thus, to the extent it is over-market, it has a smaller effect on household monthly payments. Given the added costs and higher cost per kWh imposed by following staff's recommendations, we would have thought the lower bill impact resulting from the negotiations would have been unexpected good news. Staff, however, does not mention and thus seems to have not considered the lower bill impact.

In the State's Independent Consultant's April 4 IRP-RFP Report, he estimated that the Bluewater's initial bid was $493 million above the hypothetical "market price." This is a net present value figure, and is the proper basis from which to generate a typical monthly

[1] Although the consultant does discuss the values for the present Delaware market price and the twelve-month NYMEX futures prices, he did not disclose his overall 25-year comparison price, which would have included, among other things, a component for carbon allowance costs or taxes.

payment. Back in April, we calculated that the average homeowner would pay an additional $5.00 per month over the "market price" (although we thought the "market price" estimated by the consultant was low, that is, we believe that fossil power will go up more than he predicts, thus the “wind premium” would be smaller than $5.00/month and could be a saving). We calculated $5/month by dividing the $493 million by the number of years (25), then by the number of months in a year (12) and finally by the average number of estimated customers given Delaware demographic population projections. These monthly cost impact figures were before PSC staff and the four state agencies when they made their decision on May 22 selecting the wind farm as the winning bid and are embodied in their Order, 7199.

In the most recent PSC staff and state consultant report they both indicate that the revised wind bid is only $271 million (or by our calculations, about $2.75 per month) over “market,” that a conservative commodity escalation renders it $398 million (about $4/month) over “market,” and additionally if the project closing is delayed, it is $448 million (about $4.50/month) above market.[2] Under each of these three scenarios the revised wind bid is less than the amount the earlier bid was above market when the PSC staff ($493 million) previously recommended the wind farm and when the four agencies previously voted for the wind farm. Thus, apart from our agreeing with staff's concern with the escalator, the question becomes -- if the bid was good when the Agencies agreed to the project, why is it not better now?

Point 4: The estimated price impact of the commodity escalator labeled “conservative” is a low price estimates (thus “conservative”).
Counterpoint 4: The consultant’s “conservative” estimate relies on steel market trend projection data and assumes that the dollar—now at record lows against European currencies—would stabilize. We agree that the estimate is more conservative than other estimates in the report. That does not mean that the estimate is in fact “conservative” and labeling something conservative does not make it “conservative.” We believe it is a “realistic” estimate and if it is not, would ask why the consultant did not provide any estimate that was in fact “realistic,” We believe this approach is realistic. Consequently, we consider the $398 million net present value (that is $4.00 per household per month) to be a realistic estimate, not a “conservative” one, and thus $4.00 is a more likely bill impact than the other estimates generated from the report.

We also note that the consultant has never provided a worst case analysis of natural gas prices. Wellhead natural gas prices increased by more in both nominal and real terms between 1996 and 2001 then they did between 2001 and 2006. See http://www.eia.doe.gov/oil_gas/natural_gas/info_glance/natural_gas.html. These increases resulted in an almost tripling of the nominal price and a real increase of 118%

[2] Even the unrealistic worst case scenario posited by the consultant would result in consumers only paying on average about $10.00 more a month; while the delayed unrealistic worst case scenario would result in consumers paying on average about $20 more a month in real terms.

in wellhead prices from 1996 to 2006. The consultant should have provided a similar "worst case" analysis for the natural gas plant's escalator as he did for the wind plant's escalator. If we assume the trend of 118% increase per decade continues until 2040 (the end date of the proposed natural gas term sheet contracts), the increase in pass-through of natural gas price over four decades would be 22 times today's gas price, that is, a 2,100% price increase. We think this is an unrealistic estimate of future gas price increases, but it illustrates that applying the Consultant's method of wind price escalation to the gas power plant reveals far greater consumer rate impact risk there. The consumer risk is greater for the gas plant (and for that matter, for Delaware's current generators) because the wind escalator will end sometime between 2010 and 2014, while if a gas plant is built, the term sheets for the gas plants both hold consumers liable for gas price increases until approximately 2040. Given the staff's logic, the gas backup plant should be rejected out-of-hand.

Point 5: The second of the two "material" deviations driving the staff decision is that the Bluewater Term Sheet delayed timing of the project by one year.
Counterpoint 5: HB 6 called for the four state agencies to "approve" one or more proposals by February 28, 2007. That was the deadline at the time the bids were filed. It is now likely that final approval will not occur until 2008. Given the almost one year delay in approval of the proposal though no fault of Bluewater, it hardly seems to be a "material" deviation of the earlier proposal for there to be a one-year delay in the project. While we would all prefer to have the project one-year earlier, having a wind project one-year later and then for 25 years hence, is far preferable to having no wind farm at all.

Point 6: Other jurisdictions, such as New York and Texas, have determined that offshore wind facilities are not an acceptable solution to energy needs based on unreasonable expense and uncertainty with regard to project viability.
Counterpoint 6: It is true that one project off the Texas coast is not going forward, however, what the staff ignores, is that more recently, on October 2 of this year, Texas awarded 30-year competitive leases on four offshore tracts. Moreover, given the Texas land rush, where wind energy is abundant and permitting comparatively easy, it is hardly surprising that some Texas offshore wind power projects would not continue to move forward. As for New York, it is true that the LIPA project as presently conceived is off the table for now due to projected high prices. But that project, as we noted above is much smaller and therefore more expensive per kWh than the Bluewater project. It is certainly possible that that project could return in a different form with a different developer. The staff in its cursory discussion also neglects entirely the recent RFP by New Jersey for 350 MW of offshore wind power. Why would staff cite one Texas and one New York proposals that have been withdrawn, and not mention the six continuing or new projects in Massachusetts, New Jersey, and Texas? Or for that matter, why not mention the huge expansion in offshore wind underway now in Europe? To cite only negative examples, when they are a minority, does not give the appearance of impartiality.

Point 7: The percentage of load represented by the wind farm is 30%.
Counterpoint 7: The independent consultant uses a 30% figure, which is incorrect for two reasons. First, while he acknowledges load will increase overtime, he fails to account for it. Second, he estimates Delmarva's load at 3,703GWh in 2014—this translate into an average load of 422.7MW in any given hour. However, Delmarva presented data in a February 27, 2007 powerpoint that suggested that average load would be 444 MW in 2014 and stated in its earlier December 2006 IRP filing that load would be 437MW in 2014. If one extrapolates these trends until 2040, it suggests that average load throughout the contact period will be in the neighborhood of 490MW. This suggests that the wind farm will represent between 25 and 26% percent of load. The result is that the consultant's bill impact figures would have to be adjusted to 26% of those given in the consultant and staff reports, rather than 30%.

Point 8: The 2.5% inflation pricing escalator compounds the effect of the commodity and currency escalators.
Counterpoint 8: The importance of low escalator included in the Bluewater bid—2.5% per year is seen by comparing it to the consumer price index since 2005, the year in which the state consultant based his original bid analysis on. Since 2005, the consumer price index has increased by 6.46% while the Bluewater price escalator results in only a 5.06% increase over the same period. This means that in real terms since 2005, the Bluewater price has gotten cheaper for ratepayers.

Point 9: The independent consultant states that "Delmarva's RSCI group includes 10 different rate classifications with a weighted average expected rate for this year of approximately 10.0 cents/kWh ($100/MWh)."
Counterpoint 9: The consultant included medium and large industrial users. There are only five potentially relevant classes—four residential classifications and one small general service classification. The most relevant class is class "R"—the general residential—which has a rate for this year on 11.3 cents/kWh ($113/MWh). By including irrelevant classes, the independent consultant has exaggerated the extent to which the wind term sheet price is above the supply rate paid by Delmarva residential customers.

Point 10: Bluewater's project, as revised, is not an acceptable solution to Delaware's energy needs.
Counterpoint 10: By 2014, the renewable portfolio standard in Delaware will be 11.5%. In lieu of compliance by having RECs for each MWh, Delmarva can pay a compliance payment that begins at $25/MWh, increases the next year to $50/MWh and then to $80.00 MWh the year after that. While it is true that individual ratepayers may recoup some of these penalty amounts because they will accrue to the benefit Green Energy Fund, or alternatively in whole or in part to the Sustainable Energy Utility (SEU), the penalty amounts will be passed on to all ratepayers (residential, small commercial, medium and large industrial) in the form of increased rates. Thus, without the wind farm,

there is a significant downside risk to broad classes of ratepayers that has not been quantified by either the consultant or the PSC staff in not approving the wind farm. If not from Bluewater, then from where will Delmarva obtain renewable energy? The present wind resources in all of the PJM service area are roughly equivalent to the wind power that the Bluewater Wind project would provide. As all these states compete for renewable energy to meet their Portfolio Requirements (RPS), will Delaware be able to secure renewable energy? And even the highly unrealistic worst case for the price escalator posited by the state's consultant has wind power priced below the price of solar power. If we are forced to pay penalties for not meeting Delaware's RPS requirement, or to buy other forms of renewable energy, the monthly electric bill impact on consumers will be much higher than that of the likely wind cost impact.

Point 11: The Staff states that the term sheets should be analyzed to determine whether they are "consistent with the underlying principles of Electric Utility Retail Customer Supply Act of 2006 ("EURCSA")" and are in the "public interest."
Counterpoint 11: We agree. Given the staff position that the public interest should be evaluated at this point, we are surprised that the staff's report contains no mention of the public interest health benefits of the proposed wind farm. We draw the PSC staff and the four state agencies to comments submitted in this docket on May 3, 2007, by Jonathan Levy of the Harvard School of Public Health and by Willett Kempton regarding the health benefits of the wind farm (they also can be found at http://www.ocean.udel.edu/windpower/DE-Qs/IRP-KempLevy-Health.pdf). Scaling their estimates to the now smaller wind park (450 versus 600MW), they would estimate eight fewer premature deaths, seven fewer respiratory or cardiovascular hospital admissions, 2,625 fewer asthma attacks, and 7,500 days with restricted activity each year, among other outcomes. If we multiply each of the societal health benefits identified by Levy and Kempton over the 25-year life of the project, total discounted present value of these societal benefits from the wind farm will be over $750 million.

Point 12: It is appropriate to analyze the gas backup proposals without regard to subsequent conditions, specifically approvals for new transmission, since May 22, 2007.
Counterpoint 12: If and when it is finally approved, the Mid-Atlantic Power Pathway (MAPP) would run a high-voltage line connecting from multiple power plants and power users in Virginia, into Delaware all the way to Indian River. After the state agencies acted in May, the MAPP received a key approval from the regional transmission operator, PJM; the US Department of Energy designated the area as a national interest electric transmission corridor making it easier to overcome any barriers to the line; and Governor Minner voiced her support for the new electrical transmission line. Given these important developments, not to mention the fact that natural gas plants can be built quickly and that the wind farm will not be operating until six to seven years from now, the PSC staff and the consultant should have analyzed the implications of MAPP approval and how it would affect the wisdom and necessity of building a new gas backup plant.

Considering the MAPP developments, event if backup is considered desirable by the PSC staff, the staff should analyze whether a smaller gas plant (such as only one of the two 100-megawatt units proposed by Conectiv) would be sufficient.

Point 13: It is appropriate to compare the Bluewater term sheet to the original wind bid, but not to compare the natural gas backup bids to the original Conectiv natural gas bids.
Counterpoint 13: A glaring inconsistency in the treatment of the wind and natural gas term sheets is that the natural gas backup term sheets were not compared to the original Conectiv natural gas bids. When measured against Conectiv's 2006 gas bid, both gas term-sheet proposals are less favorable to Delmarva customers. They offer no price stability benefits, and despite their backup function, both are even larger than the proposed stand-alone Conectiv plant. In both new gas proposals, all increases in natural gas prices, and all carbon dioxide fees, would be passed through as higher, uncontrolled electricity prices for a period of 25 years. In the May 22 Order, the four state agencies required that any change from the original bids result in greater price stability, lower price or other benefits for consumers. The changes proposed by NRG and Conectiv do just the opposite. Again to the extent additional gas backup is deemed necessary, the terms for such backup should return to Conectiv's original proposal for a 10-year commitment (which makes even more sense now in light of the MAPP developments detailed above) with price increases tied to a less volatile coal index and carbon taxes and RGGI costs not treated as a pass-through.

Point 14: It is appropriate to analyze natural gas backup plants without regard to existing, unused natural gas generation already available in southern Delaware.
Counterpoint 14: The decision by the four state agencies to consider term sheet proposals for natural gas backup was made in a truncated period of staff analysis and public review given the late genesis of the staff proposal in the RFP process. We thus expected that PSC staff and the independent consultant would have engaged in a more considered analysis of the availability of other options for backup during the intervening months. A review of the staff report and consultant assessment of the term sheets, however, reveals no analysis of these options. In southern Delaware, the existing gas plants are often idle as it is. This past July and August, more than 350 megawatts of natural gas generators in Kent and Sussex counties sat idle. Based on out best estimates given the data we were able to obtain, we estimate that they ran on an average less than ten percent of the time (probably closer to only 7 percent of the time). The PSC staff should have analyzed whether it makes sense to build 200 or 300 (or even 100) new megawatts for backup on top of so much idle capacity.

Point 15: It is appropriate to analyze natural gas backup plants without regard to how they compare to the market price.
Counterpoint 15: We disagree. Indeed, we were further hampered in our ability to analyze the merits of the backup bids and to compare them to the original Conectiv bid because the Consultant did not disclose the stand-alone price of the term sheet gas bids; how those prices shifted with changes in natural gas prices and with MWh of electricity purchased by Delmarva; and the hypothetical market price he was comparing the bids to. We find remarkable that the independent consultant and staff should show such heightened concern about an unlikely huge run-up in steel prices and related escalators over about 4 years (re the wind bid) but have no serious analysis (other than reference to EIA projections, historically proven to underestimate future prices) about the possible ratepayer impact of locking Delaware ratepayers into 25 years of natural gas price increases. Indeed, that was the primary reason for HB 6 in the first place, to provide ratepayers with some fraction of the generation mix that is not susceptible to volatile fuel price increases.

Respectfully submitted,

Jeremy Firestone
Willett Kempton